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ABSTRACT

Developed to assist local educational agencies in developing vocational exploratory programs for ninth and tenth grade students, the document outlines activities that emphasize self-exploration and occupational information. Information needed to assess the direction and limits of individual programs, identification of occupational groupings, and instructional program planning, (including program descriptions, goals and objectives, activities, and administrative procedure) are outlined. Business, environmental, industrial, and service occupations exploratory laboratory groupings and career resource center information are individually appended and make up the bulk of the document. Business occupations include business and office, distribution and marketing, communications and media; environmental occupations include agri-business and natural resources, environment, marine science, and recreation; industrial occupations include manufacturing, construction, transportation, fine arts and humanities; and, service occupations cover consumer and homemaking, health, personal service, and public services. Sample activities pertaining to the individual area job groupings, special facility considerations, and equipment lists are provided. Career Resource Center provides lists of necessary equipment, books, films, booklets, and tapes available. It is emphasized that programs should be designed to meet the needs of the students, capitalize on previous career education experiences, and contribute to subsequent high school and post high school opportunities. (LH)

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GUIDE FOR
ESTABLISHING
PROGRAMS OF
VOCATIONAL
EXPLORATION

WEST VIRGINIA
DEPARTMENT OF EDUCATION
BUREAU OF VOCATIONAL,
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PREFACE

*Vocational exploration describes an educational process (method or approach) rather than a specific program of study. Yet it is based upon concepts which must be learned by the student prior to the preparation for a career. The primary method of the process is the use of "hands on" experiences to illustrate abstract symbols and concepts related to self, education, and careers.

Emphasis during vocational exploration focuses on "trying out" one's self identify in real life or simulated situations. These experiences are provided in academic classes, special career classes, vocational centers, and/or practical arts programs. While the experiential base is broadened during the exploratory phase, the informational base concerning more specific careers is also heightened.

A number of basic concerns should control the development of actual programs for vocational exploration. The programs should be designed so that they meet the needs of the students. Also, the program developed should capitalize on prior career education experiences and contribute as much as possible to subsequent opportunities at the high school or post-high school levels.

"Hands-on" experiences, the sociological and psychological factors of work, the economics of work, self-exploratory experiences, and occupational information must be incorporated into a systematic approach to vocational exploration.

In terms of the range of occupations to be considered, all occupational areas that relate to ongoing and anticipated preparatory programs within the local educational agency (L.E.A.), should be included during the exploratory phase.

Realism should be sought. It is helpful to simulate the job site environment, conditions, and working relationships in various ways, such as models, exhibits, and/or locally produced audio-visuals depicting on-site occupational operations.

Team-teaching is a suitable instructional concept for incorporating the diversity needed for vocational exploration programs.

Current information about community resources is important. A major task will be establishing procedures for keeping up to date regarding available local resources for vocational exploration. Student-conducted community occupational surveys may be very useful.

Flexibility and variety are important in planning and operating vocational exploration programs. Effectiveness must be measured in terms of fulfilling the career education needs of students who vary in their personal characteristics, as much as they differ in communication and computational skills. With these basic concerns in mind it is now possible to sketch a variety of vocational exploration programs that may permit the activities that will provide an interest for ninth and tenth grade students.

*Vocational exploration as used in this document denotes those programs that provide experiences that relate to local vocational preparatory offerings. Grade levels nine and ten are those identified by the Bureau of Vocational, Technical and Adult Education, West Virginia Department of Education, as the exploratory years.

ACKNOWLEDGEMENT

Appreciation is extended to all individuals who contributed to the development of this guide.

Special recognition should be given to members of the Bureau of Vocational, Technical and Adult Education; faculty in the Division of Occupational, Adult and Safety Education at Marshall University; staff members in the Raleigh County Research and Development Project in Career Education; the North Carolina Department of Public Instruction; and Bluefield State College, Division of Applied Science and Technology and a large number of teachers who participated in a summer curriculum development workshop.

I. PURPOSE

This guide has been developed to assist local educational agencies in designing and implementing vocational exploratory programs. Hopefully, this document will be of assistance in establishing new programs and be of an informative nature to existing programs.

II. NEEDS ASSESSMENT

Needs assessment refers to those activities that should be performed to gather information in order to determine the direction and parameters of an educational program. The information to be gathered may relate to students, facilities, related programs and services; and other data relevant to developing the program. Much of the information is available. However, in certain cases, research may be needed to set forth a quality educational program. In developing a proposal, some of the most pertinent criteria that may result in activities are given below. Consideration should be given to "developing each criterion for the needs assessment."

The needs assessment is similar to those outlined in vocational exemplary programs. The guideline for vocational exemplary programs will suffice in lieu of the needs assessment if an exemplary project is to be pursued.

- A. **Student Needs:** What are the student needs at the vocational exploratory level and by what means can they be achieved? What procedures are used to determine student needs and interests to systematically give student placements that match these needs and interests? Are there any special aptitudes or abilities that the student should have for this program? Describe how the program will benefit the student as well as the population to be served. The State-County Testing Program will provide the L.E.A. with career plans of students at the ninth grade level. Specific tests that measure student needs are available.
- B. **Existing Facilities:** Can use be made of existing facilities? Does the planned curriculum correspond to the facilities and equipment available? Curriculum materials have been developed around the four groupings as listed in this guide. (Examples: Industrial Arts Laboratories, Vocational Agriculture Laboratories, Home Economics Laboratories, Business and Office Laboratories and Distributive Education Laboratories.) Will additional facilities and equipment be required? Is there provision for proper classroom and laboratory conditions, such as size, ventilation, lighting, etc., that provides for maximum classroom atmosphere conducive to good study? Are the most current safety standards being observed? Are the facilities equipped with the type of equipment and other learning materials that will meet the current requirements of industry? In utilizing the present school facilities, do students who are planning on entering a vocational education program, have an opportunity to experience several vocational areas?
- C. **Existing Related Programs:** Describe how well existing programs can fit in with vocational exploration programs. Can these programs be adapted to vocational exploration and what types of in-service will be required to accomplish the goal?
- D. **Prior Placement and Training Experiences:** What other types of career activities have taken place in the school system and do they relate to the proposed vocational exploration program? Will these students be placed in vocational programs as indicated by their performance in vocational exploration activities?
- E. **Present Utilization of Existing Vocational Facilities:** What is the present and past student enrollment in local vocational facilities? What is the student population in the programs at the beginning of a term as compared to the last week of the term?
- F. **Occupational Areas Available:** What occupational programs are available in the local vocational programs and what is the status of these programs?
- G. **Jobs Available in the Area, Region and State:** Self explanatory.

III. IDENTIFICATION OF OCCUPATIONAL GROUPINGS

The four main groupings generally explored are listed below and include the fifteen occupational clusters as identified by the United State Office of Education (U.S.O.E.). (The L.E.A. may have another system that would best meet its needs.)

1. **Business Occupations Exploratory Laboratory Groupings:** Business and Office, Distribution and Marketing, Communications and Media.
2. **Environmental Occupations Exploratory Laboratory Groupings:** Agri-Business and Natural Resources, Environment, Marine Science, and Recreation.
3. **Industrial Occupations Exploratory Laboratory Groupings:** Manufacturing, Construction, Transportation, Fine Arts and Humanities.
4. **Service Occupations Exploratory Laboratory Groupings:** Consumer and Home-making, Health, Personal Service, and Public Service.

A career resource center is necessary to compliment any successful vocational exploration program. (See appendices E for career resource center.)

Normally most L.E.A.'s do not have all the vocational course offerings that relate to the fifteen U.S.O.E. occupational clusters. Each grouping would usually require separate laboratories. The clusters can be implemented separately or together, but the L.E.A. is encouraged to group clusters for the sake of a manageable program. It is possible the L.E.A. would combine some of the occupational areas into other groupings as they see fit. Each L.E.A. is encouraged to explore as many of the occupational clusters as possible.

IV. INSTRUCTIONAL PROGRAM

Successful programs should be carefully planned. They should consist of the following:

1. Purpose clearly stated
2. Complete description developed
3. Measurable objectives developed
4. Program administration defined
5. Instructional procedures outlined
6. Evaluation procedures stated
7. Materials list developed
8. Facilities needed
9. Equipment list developed
10. Budget developed
11. Curriculum outlined
12. Time schedule developed

Various approaches can be made in planning a program. A team composed of teachers and administrators can be organized. The team should study the exploratory need of the students and develop the program based on these needs. Vocational directors should be involved in the planning process and the clusters of mini courses offered in the exploration program should relate to the vocational course offerings in the L.E.A.

A. Program Descriptions

The following implementation methods for vocational exploration programs are suggestions and should meet the needs of most L.E.A.'s. An alternate approach may be desirable in some situations.

1. Alternative 1

At the ninth and/or tenth grade level, students visit ongoing vocational programs and receive "hands on" experiences. These types of exploratory programs have been conducted by a number of counties in West Virginia. In order to provide an adequate experience each student spends at least twenty hours per semester in each of the occupational groupings. The schedule should insure an equal amount of time in each occupational grouping.

2. Alternative 2

Offer seven of the fifteen clusters as identified by the U.S.O.E. at the ninth grade level and the other eight clusters in the tenth grade. The schedule should insure an equal amount of time in each occupational cluster.

3. Alternative 3

Offer all fifteen clusters as identified by the U.S.O.E. at the ninth grade level and narrow down the offering at the tenth grade level based on the interest and needs of the student.

4. Alternative 4

Offer the fifteen clusters as identified by the U.S.O.E. in the tenth grade and schedule in such a manner that each area has an equal amount of time for exploration.

5. Alternative 5

At the ninth grade level, students would spend forty-five one hour periods in an occupational grouping. Twenty-two periods would be spent in each of two laboratories exploring at least seven career clusters. The students would then rotate to the second occupational grouping if one is available. Usually a vocational exploration program will consist of separate laboratories designed around the occupational groupings listed in page 2 of the guide. The student should be scheduled in the career resource center at least six hours during each grouping cycle.¹

At the tenth grade level, students spend one hundred eighty-one hour periods in the program. The student will spend forty-five hours in each of the four occupational groupings.

6. Alternative 6

Offer work sampling programs with local business and industry. Prior to providing for a work sampling program, nonpaid work experience or exploratory programs as a part of a local educational agencies curriculum, personnel involved in the operation of such programs should make themselves aware of the restrictions, regulations, and liability associated with nonpaid work experience and exploratory programs. According to U.S. Department of Labor Publication WH-1297, p. 2 and 3, 1973, these programs are legal only if the following criteria are applied.

- (1) The training, even though it includes actual operation of the facilities of the employer, is similar to that offered in a vocational school.
- (2) The training is for the benefit of the trainees or students.

¹See page 8 for an explanation of career resource center.

- (3) The trainees or students do not displace regular employees, but work under their close observation.
- (4) The employer that provides the training derives no immediate advantage from the activities of the trainees or students, and on occasion his operations may actually be impeded.
- (5) The trainees or students are not necessarily entitled to a job at the conclusion of the training period.
- (6) The employer and the trainees or students understand that the trainees or students are not entitled to wages for the time spent in training.

If all six of the criteria apply, the trainees or students may be considered not to be an employee and, therefore, may participate in a nonpaid training situation within the meaning of the Fair Labor Standards Act. In addition to these criteria, students should rotate in the work experience cycle without settling in one occupational area of work an excessive length of time at one establishment, nor may his work provide an immediate advantage to the employer. After a student has been with an employer for thirteen weeks, the Wage and Hour Division of the U.S. Department of Labor, Employer Standards Administration, will consider an employment relationship to exist. Further, only students sixteen years of age or older will be allowed to participate. In addition, those student participants should not in any way come in contact with a facet of an occupation that is considered hazardous.

A prime concern is to protect training sponsors, students, and board of education personnel against liability resulting from bodily injury suffered by participating students in such a program. Provisions have been made to provide protection of participating students under Workmen's Compensation. An employer or board of education engaged in a work experience program or career exploration program may obtain protection under the Workmen's Compensation Act by paying a premium based upon the amount of pay required as minimum for the occupation in which the student is receiving experience training. Since no wages or remuneration for services is paid, their rate of pay shall be deemed to be the equivalent of at least the State minimum wage requiring the employer or the local board of education to pay a contribution ranging from \$0.25 to \$1.00 per \$100.00 of wages computed on a hypothetical rate of pay.

Thus, it is the opinion of the Bureau of Vocational, Technical and Adult Education, that planned high quality nonpaid work experience and career exploration programs not involving an employee-employer relationship extend and improve the learning environment for participating students. Prior to such participation in this type of curriculum offering, local educational agencies should assure compliance with regulations applicable to the operation of this type of program. Further, for protection against possible liability resulting from participation in such programs, participating students should be provided coverage under the State of West Virginia Workmen's Compensation Fund.

See Bulletin #1 Hazardous Occupations Order, U. S. Department of Labor

See Bulletin #2 Application Procedure for Workmen's Compensation Coverage, U.S. Department of Labor

See Bulletin #101 A Guide to Child Labor Provisions of the Fair Labor Standards Act, U. S. Department of Labor

For further information concerning work sampling programs contact the Supervisor of Cooperative Education, Bureau of Vocational, Technical and Adult Education.

B. Goals, Objectives, and Instructional Activities

1. Goal:

To provide an opportunity for all ninth and tenth grade students to explore a wide variety of careers.

Objective:

To provide a wide range of activities that allow students to explore career areas.

Instructional Activities:

- (1) "Hands on" experiences
- (2) Career day programs
- (3) Industrial and educational visits
- (4) Guest speakers
- (5) Individualized programmed materials
- (6) Interviews with people from career clusters
- (7) On the job experiences (co-op programs)
- (8) Simulated work experience and role playing
- (9) Use of community resources
- (10) Discussions
- (11) Other

2. Goal:

To assist students in understanding the necessity of each person contributing to the maximum of their ability toward a productive society.

Objective:

To create a feeling of pride in contributing economically, socially and morally to the society in which one lives.

Instructional Activities:

- (1) School wide projects
- (2) Volunteer community activity
- (3) Charitable organizations (UNICEF, etc.)
- (4) Club participation (FFA, 4H, VICA, etc.)
- (5) Athletics
- (6) Church work
- (7) Visit service club meetings (Lions, Rotary, etc.)
- (8) Guest speakers

3. Goal:

To assist the students in achieving a realization of the relationship between self-understanding and career choice.

Objective:

To assist the individual student in discovering those characteristics that make him unique. To assist the student to become aware of his strengths and weaknesses. To aid the student in correlating this information with career choices.

Instructional Activities:

- (1) Individual and group counseling
- (2) Testing-ability, aptitude, interest
- (3) Self-searching opportunities for self-expression
- (4) Interpersonal interaction
- (5) Interviewing
- (6) Group-regroup activities

4. Goal:

To develop through exploration an awareness of the dignity, purpose and value of all work.

Objective:

To provide the opportunity for the student to explore a variety of job clusters and their relationship to society as a whole. To increase the students awareness of the contribution made to society by all workers.

Instructional Activities:

- (1) Student-conducted interviews
- (2) Simulated classroom experiences
- (3) Guided tours
- (4) Audio-visual materials
- (5) Guest speakers
- (6) Group counseling
- (7) Job experience

5. Goal:

To assist students in becoming adaptable to changing technological, social, and economic conditions.

Objective:

To help the student in discovering various ways he or she can successfully adapt to changes in their career. To aid the student in choosing a career preparation program that will provide him with transferable skills.

Instructional Activities:

- (1) Historical examples
- (2) Guest speakers including personnel who are employed in various occupations
- (3) Job search of open-ended jobs
- (4) Special interest group speakers (Union leaders, educational institutions, military, etc.)
- (5) Audio-visual materials about jobs of the future and education needed for them.

6. Goal:

To develop student realization of the various structures and levels of the world of work.

Objective:

To become aware of the skills and competencies needed for different job levels. To aid the student in choosing a career that will provide a life style of his choice.

Instructional Activities:

- (1) Job searches
- (2) Interviews with personnel directors and members of various occupations
- (3) Audio-visual materials
- (4) Guest speakers
- (5) Guided tours and trips

7. Goal:

To increase student awareness of the effect of supply and demand on career choices.

Objective:

To develop in students the realization that career choices must be influenced by the supply and demand of the labor market. To assist students in choosing career clusters with greater stability and avoiding those with less likelihood of remaining in the labor picture. To correlate supply and demand of the labor market with student characteristics and abilities.

Instructional Activities:

- (1) Application forms
- (2) Group discussion
- (3) Visits by workers from mobile areas (Construction workers, electricians, etc.)
- (4) Speakers from branches of the military

8. Goal:

To stress the importance of inter-personal relationships and their effect in the world of work.

Objective:

To help students realize that much of their success or failure in the world of work will depend on their ability to get along with people.

Instructional Activities:

- (1) Personal interviews
- (2) School clubs and organizations
- (3) Guest speakers-personnel directors
- (4) Individual and group counseling
- (5) Task-oriented group work

C. Personnel

An applicant must possess a professional license endorsed for teaching Industrial Arts, Vocational Agriculture, Home Economics, Business and Office, Distributive Education, or the Vocational Certificate.

Staff Development

Pre-service education programs should be provided for teachers during the summer prior to the initiation of a new program for the purpose of familiarizing the teacher with program goals and objectives, teaching techniques, educational activities, and media. State vocational exploration workshops will be held each summer. Special workshops will be held upon the request of an L.E.A.

Teachers engaged in teaching vocational exploration should be allowed additional preparation periods for program development and coordination of course work.

D. Administration and Supervision

The administration and supervision of vocational exploration programs should have as their goal the most efficient and meaningful educational experiences possible for students.

1. Once the plan has been developed, it is essential that the entire faculty, along with the local vocational director, principal and members of the central office staff, be brought together for a full explanation and discussion of what is to be accomplished. There must be total commitment from all concerned if the program is to succeed.
2. The forces of vocational education, general education, and guidance and counseling must be brought to bear on vocational exploration.
3. The supervisor and/or coordinator should be familiar with objectives and operation of both vocational and general education programs.
4. State level educational leadership and coordination is available for developing materials, activities, and in-service opportunities for vocational exploration programs.

E. Facilities and Equipment Needs

The following pages give some suggestions for facility layout, equipment and teaching materials, along with some student activities. A word of caution is given, however, concerning teaching materials. There is an ever growing amount of occupational information on the market today, some of which is of questionable value. It is strongly recommended that any material purchased be carefully reviewed by the teachers who will use the material. Only those materials that fill a particular need for the students in your schools and which are in line with the vocational exploration concept should be secured. Equipment should be selected on the basis of how well it will provide the student with adequate work sampling. Less expensive equipment will normally be purchased for vocational exploratory programs.

Exploratory programs will not require the same amount or type of equipment as those recommended in the preparation phase of vocational education. An example would be the preparatory machine shop which requires seven or eight metal lathes running in various sizes, as compared to the exploratory program which would have one or two thirteen inch metal lathes. Smaller equipment will provide the necessary experiences for work sampling.

Portable equipment may be utilized in laboratories having limited space. The equipment would be housed in regular storage areas until needed. There should always be a sufficient number and variety of tools and equipment so that each student can be productively engaged. Normally, all equipment purchase decisions should be based on "need/use" criteria such as, what is needed to implement the program? How will this be used in implementing the grouping approach? Because of the large number of various activities that should exist in each laboratory, there is a need to utilize every piece of equipment, therefore, unused equipment should be replaced with highly motivational items. (For a suggestion of items of equipment see Appendices A-E).

Career Resource Center

A career resource center should be provided for a comprehensive career exploration program. The C.R.C. (career resource center) is staffed to assist with career information, self-analysis, individual and group guidance, etc. All exploratory laboratory teachers should schedule a specific amount of time for all students to work within the career resource center during the period in which they are in each laboratory. The career resource center is a vital part of any effective career exploration program.

Activities in this laboratory should provide students the opportunity to engage in learning experiences related to self-appraisal and should be closely connected to the carefully planned experiences in the other laboratories, so as to provide students immediate follow-up and reinforcement to these learning experiences.

Provisions should be made for students in all laboratory areas to have access to the career resource center at least once each week. This will enable them to study about job opportunities related laboratory activities during the time they are engaged in "hands on" experiences.

F. Materials and Supplies

Each laboratory will require a variety of teaching materials. If a school has a career resource center, included should be materials such as: career games, catalogues, newspapers and an assortment of career films. Consumable materials and supplies are a must and the need for them will be continuous.

G. Financing

Vocational education by its very nature costs more money than a general education program. Vocational exploration also requires additional financing to operate effectively. The extent of cost depends on the comprehensiveness of the program, the number of personnel needed, the facilities, equipment, materials and supplies which must be provided. Housing, teachers, and equipment alone are not sufficient for good programs. Funds must also be budgeted for materials and expendable supplies. The following are possibilities of funding sources:

1. Vocational exemplary
2. State aid
3. Teachers are eligible for State foundation
4. Local or community support
5. Student contact hours

H. Evaluation

With the vocational exploration emphasis in the total curriculum, a variety of techniques are utilized when an evaluation of the entire curriculum is performed. Usually, instruments of a standardized or written nature have been used as the main form of evaluation. Other forms of evaluation, including interviews, anecdotal records, experience diaries, checklists, and other forms of informal tests must be used more and more. Even with informal tests, however, there must be a common format and uniformity of application. Teachers in particular need to know a great deal about evaluation and how to use specific evaluation techniques. There is a need to go beyond the measuring of information learned and skills developed. Work sampling is an excellent method to expose students to the actual conditions of the job. This activity must be closely coordinated with a designated person in the school system. The evaluation should also be a concern with the kinds of habits and attitudes the students are forming. The question of concepts, reasoning, ability, interests, appreciations and personal adjustment must be considered. Additionally, the extent to which the student is using and applying knowledge and skills must be evaluated.

1. Guideline for Evaluation

- a. Program evaluation must be based upon the objectives of the program.
- b. Adequate planning for continuous and comprehensive evaluation should be an integral part of the program.
- c. Students of the vocational exploration program should be actively involved in the evaluation of the program.

- d. A vocational exploration advisory committee should be involved in the evaluation of the program.
- e. Follow-up studies should be continued through high school and first year of post-secondary status so that the effectiveness of the vocational exploration program may be determined.

2. Student Evaluation

While decisions for grading rests with the local educational agency, it is recommended that letter or numerical grades not be given for vocational exploratory activities. If the local unit requires that grades be given each student, it is believed that they should be based on the following criteria:

- a. Development of good work habits
- b. Attitude toward work or performance
- c. Student initiative
- d. Knowledge of careers
- e. Working conditions

I. Implementation

A review of the literature should be the first step of beginning a vocational exploration program. One of the best sources of research information available is the Educational Research Information Center (ERIC), which is located at Marshall University, Huntington, WV 25701.

Community involvement in vocational exploration is essential in gaining support for the program. Business, industry, government agencies, and other potential employers should be encouraged to provide materials, facilities and expertise for exploratory program. The mass media such as newspapers, radio, and television should be utilized as a part of the program and instructional materials as well as vehicles of public information.

APPENDICES

A. BUSINESS OCCUPATIONS EXPLORATORY LABORATORY GROUPINGS

29

GROUPINGS:

**BUSINESS AND OFFICE
DISTRIBUTION AND MARKETING
COMMUNICATIONS AND MEDIA**

SAMPLE ACTIVITIES

Business and Office

1. Form a corporation to sell shares of stock at school. Directors will be elected, stock issued, equipment and supplies purchased, and the product sold.
2. Develop a basic knowledge of the operation of a typewriter, the correct typing position and a lesson in using the home-row keys and space bar.
3. Develop a basic knowledge in the three fundamentals of accounting assets, liabilities and owners equity.
4. Develop an introductory level skill in shorthand, using seven different symbols for letters and four punctuation symbols.

Distribution and Marketing

1. Draw an organizational chart for a drug store.
2. Prepare a sample order for new merchandise.
3. Make monthly statements for customers.
4. Write commercial ads and announcements designed to sell products and services.

Communications and Media

1. Given a set of working drawing and specifications, decode the information and fabricate the parts necessary to build a glider.
2. Prepare description of a photographic essay, use a camera or magazine clipping to accomplish this objective.
3. Gather background information on the consumers needs for commercially printed material for an institution.
4. Reproduce media by screen-process printing and after recording materials used and labor time required for production, compute the actual cost of production.

GROUPINGS:

BUSINESS AND OFFICE DISTRIBUTION AND MARKETING COMMUNICATIONS AND MEDIA

In using the grouping approach, it should be understood that there is often an "overlap" within the groupings. Photography (studio and darkroom), silkscreening, printing, and block printing could be transferred to the Industrial Occupations Laboratory if more adequate instruction could be provided.

SPECIAL FACILITIES CONSIDERATIONS

- Size:** Sample layout 1980 sq. ft. - very large.
Minimum recommended - 900 sq. ft.
Considered optimum - 1500 sq. ft.
- Lighting:** 30-50 ft. candles - glare free.
30 ft. candles adequate for reception area.
50 ft. candles needed in typing, ad layout, etc.
- Ventilation:** Needed to eliminate toxic (darkroom) or offensive odors (inks, paints, thinners, etc.)
- Electricity:** Outlets desirable every 6 ft. around room.
Wiremold outlets around the perimeter are preferred.
- Carpeting:** Highly desirable in reference area and right hand side of laboratory up to and including photographic studio. Could be used in most of laboratory, but would be a liability in printing or other "messy areas."
- Safety:** Safety precautions should be exercised in all areas at all times. Goggles should be used in the darkroom.
- Storage Areas:** Needed for overall supply storage of laboratory; student storage for uncompleted activities and personal belongings while in laboratory; aprons and protective coverings for use in photographic, printing, and mimeographing sections.

BUSINESS OCCUPATIONS EXPLORATORY LABORATORY

GROUPINGS:

BUSINESS AND OFFICE
DISTRIBUTION AND MARKETING
COMMUNICATIONS AND MEDIA

Suggested Furniture and Facilities:

- 5 Typing tables adjustable
- 4 Trapezoidal tables
- 2 Round tables
- 1 Teacher's desk
- 1 Storage cabinet w/ counter top
- Wall cabinets
- 1 Storage cabinet w/ counter & sink 30" x 96"
- Switchboard tele-trainer & regular tele-trainer
- 3 Bulletin board walls
- 1 Showcase w/ sliding glass doors
- 2 File cabinets 4 drawer
- 2 Bookcases
- Appropriate seating
- Ample electrical outlets
- 1 Darkroom w/ safety lights, sink & water, base and wall storage approximately 5' x 8' wall height or 8' (optional)
- 1 Worktable and appropriate lighting (optional)
- 1 Periodical rack

Major Equipment to be Considered:

- 1 Cash register
- 1 Spirit duplicator
- 4 Manual typewriters
- 1 Electric typewriter
- 2 Adding machines
- 1 Shorthand machine
- 1 Calculator - electronic
- 1 Camera
- 1 Mannequin
- 1 Checkwriter
- 1 Dictating/ transcribing machine
- 1 Scales - postage/ grocery
- 1 Stencil duplicator
- 1 Key punch or simulator
- 1 Cartridge type teaching machine
- 1 Duplicating cabinet

Major Equipment to be Considered (continued):

Audiovisual equipment, if not available from other departments, such as:

16 mm sound projector
8mm projector
Strip/slide projector
Tape & record players
Audiovisual movable stands
Overhead projector

Small Equipment to be Considered:

Styli (for stencils)
Silkscreen frame
Credit card charge machine
Cassette player (only)
Cassette recorder
Pliers
Assorted screwdrivers
Staplers
Rulers
Scissors
Tape dispensers
Soap dispensers
Photo developing trays
Card files - 3x5 or 4x6

List of Possible Supply Needs:

Cash register tape
Play money - bills & coins
Adding machine tape
Simulated groceries
Assorted materials for displaying
Lettering guides
Stencils
Correction fluid
Spirit master units (several colors)
Stencil illustrations
Stencil protector covers
Stencil file folders
Mimeo ink
Manila folders
Canary second sheets
Mimeo paper
Duplicating paper
Copy or tracing paper
File cards with indexes
Junior high typing manuals
Sample charge booklets

List of Possible Supply Needs (continued):

Sample office forms
Sample order blanks
Photographic film & supplies
Carbon paper & carbon pacs
A-Z file guides
Numeric file guides
Cassette tapes
Sample deposit slips
Sample checks
Tool for pulling paper (keypunch)
Keypunch cards
Cartridges (teaching machine)
Glue
Magic markers
Typing erasers
Tacks
Tape - masking & transparent
Batteries for cassette
Pins
Duplicating soap (for hands)
Pencils
Sound on slide cartridges
Machine instruction cartridges
Ribbons for machines
Duplicator fluid
Appropriate inks
Telephone directories
Steno pads
Pencil Sharpener
Telephone message pads
Paper cutter
Screen for projection
File trays
Chalkboard
Clock
Paper towels
Copier (Xerox, Thermofax)
Typing paper
Wastebasket
If have mimeograph machine, get an illuminated drawing board
Rulers
ZIP Code Directory

**B. ENVIRONMENTAL OCCUPATIONS EXPLORATORY LABORATORY
GROUPINGS**

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GROUPINGS:

AGRI-BUSINESS AND NATURAL
RESOURCES
ENVIRONMENT
MARINE SCIENCE
RECREATION

SAMPLE ACTIVITIES

Agri-Business

1. Prepare a food, animal and/or plant chart which indicates decisions made as a raw material is produced.
2. Develop a complete step-by-step plan of action from breeding to marketing for a particular animal. Include a budget of income and expenses.
3. Conduct a feeding experiment with laboratory animals, using two different rations. Record the findings. Compare costs.
4. Plant and care for a given plot of ground. Keep a record from the time ground is broken. Send soil samples to a testing laboratory. Divide the plot and try out two or more methods of weed control.
5. Follow the commodity exchange for one or two weeks. What changes occur and why?

Natural Resources

1. Describe the uses for each kind of wood from trees found in your area.
2. Collect different kinds of cones of pines, spruce, firs, etc. Make a wall display of them.
3. Plant trees on school land or at a playground.

Environment

1. Look at the classroom, school, neighborhood, and community through the eyes of an environmental inspector. List the people whose job involves the responsibility of caring for the environment.
2. Set up a waste purification system with the aid of the science teacher and run some polluted water through it. How does the system compare with the community's purification system?
3. Gather all the things personally thrown away in the course of a day into a bag and weigh it. Determine how much trash is personally contributed to the world in a year and how much the class contributes. Could the amount of waste be decreased? What decisions would have to be made? How would these decisions affect lifestyles?

Marine Science

1. Collect water samples.
2. Check game and fish population.
3. Check on migratory fowls and animals.
4. Establish feeding stations and refuge area.
5. Do pond seeding.
6. Experiment with improving species.

GROUPINGS:

**AGRI-BUSINESS AND NATURAL RESOURCES
ENVIRONMENT
MARINE SCIENCE
RECREATION**

A list of materials and equipment deemed desirable for conducting activities within the groupings is considered flexible as needs change for the laboratory. Some materials would be expected to be interchanged between other laboratories.

SPECIAL FACILITIES CONSIDERATIONS

- Size:** Determination will be dependent upon instructional activities in various grouping areas. The area should be equal to 100 sq. ft. per pupil. Approximately 800 sq. ft. for classroom space should be available in addition to the 100 sq. ft. per pupil.
- Lighting:** Adequate lighting depending upon the specialized equipment.
- Electricity:** Required power for designed equipment (1 phase/3 phase).
- Safety:** To be in conformity with O.S.H.A., Fire Marshal and other rules and regulations pertaining to shop areas.

ENVIRONMENTAL OCCUPATIONS EXPLORATORY LABORATORY

GROUPINGS:

AGRI-BUSINES AND NATURAL RESOURCES-
ENVIRONMENT
MARINE SCIENCE
RECREATION

Much of the equipment and materials listed may be found in Agricultural supply catalogs. Other materials and equipment may be secured from the following agencies:

County Extension Agent
Soil Conservation Service Booklets
Forestry Service
Wildlife Commission
West Virginia Department of Agriculture
West Virginia Department of Labor

Equipment:

- 1 Transparent hen demonstration incubator
- 1 Egg scale
- 1 Egg candler
- 1 Egg grader
- 1 Egg basket
- 1 Poultry brooder (small)
- 2 Poultry feeders
- 2 Poultry waterers
- 1 Veterinary thermometer
- 1 Electric animal shearing clippers
- 1 Animal cage
- 1 Ear notcher
- 1 Tattoo set
- 2 Animal grooming combs and brushes (each)
- 1 Soil tube
- 1 Soil auger
- 1 Set soil sieves
- 1 Soil testing kit
- 1 Soil sampling spade
- 1 Soil classes kit
- 1 Capillary soil water demonstration set
- 1 Rock collection kit
- 1 Land measure compass
- 1 Pocket area scale
- 1 Folding measuring land wheel
- 1 100 ft. steel tape
- 1 Greenhouse
- 1 Soil sterilizer
- 2 Hoes
- 2 Garden rakes
- 2 Mattocks
- 2 Shovels, long handle
- 2 Shovels, short handle
- 2 Axes
- 2 Pitch forks

Equipment (continued)

- 2 Potato forks
- 1 Hole digger
- 2 Hatchets
- 2 Leaf rakes
- 1 Wheelbarrow
- 1 Garden hose (100 ft. 5/8")
- 1 Spray nozzle
- 1 Cyclone seeder
- 1 Long blade transplanting spade
- 1 Hydroponic kit
- 2 Long handled bulb planters
- Seed flats (or lumber for construction)
- 1 3 gallon capacity sprayer
- 2 Lopping shears
- 3 Hand pruning shears
- 1 Hedge shears
- 1 Pruning shears
- 1 Pole pruner
- 1 Pole saw
- 1 Bow saw
- 2 Horticulture hand tools (weeder, fork, rake, etc.) set
- 4 Pruning knives
- 1 Budding and grafting knife
- 1 Set grafting charts
- 1 Indoor greenhouse miniature
- 1 Seed starter
- 1 Vegetable and crop grading equipment (each)
- 1 Tree marking gun
- 1 Increment borer (for cross sections of trees)
- 1 Log rule
- 1 Log caliper
- 4 Log scale sticks
- 1 Set tree identification replicas
- 1 Insect net
- 1 Insect spreading board
- 1 Insect killing jar
- 1 Insect exhibit case
- 1 Beehive (complete with frames)
- 3 Pounds of bees
- 2 Bee vials
- 1 Hive tool
- 1 Bee smoker
- 2 Pairs of bee gloves
- 1 Glass observation hive
- 1 Terrarium (gallon jug may be used)
- 1 Tin tub (for worm rearing)
- 2 Hand crosscut saws
- 1 Water testing set or kit
- 1 Bioscope
- 2 Microscopes
- 1 Sod edger (hand or electric)
- 1 Hand lawn mower
- 1 Roto tiller
- 1 Weighing scale (60 lb. capacity)
- 2 Angle spout oilers

Equipment (continued):

- 2 Hammers (each) (Tinner's, machinist's, ball peen, etc.)
- 2 16oz. claw hammers
- 2 Pliers (each) (electrician side cutting pliers, combination pliers, long chain needle nose pliers)
- 3 Screwdrivers (each) (Philips and regular in assorted sizes)
- 2 Soldering coppers - electric
- 3 Coping saws
- 2 Hacksaw frames
- 1 Indoor thermometer
- 2 Wire strippers
- 2 Magnetic compasses
- 1 Outdoor thermometer
- 1 Rain gauge
- 1 First aid emergency kit
- 2 Fire extinguishers
- Eye goggles (for each student for largest class)
- 5 Fiberglass safety hats
- 4 C-clamps
- 4 Bar clamps
- 4 Hand screws
- 1 End cutting nippers
- 1 Marking gauge
- 4 Zig zag rules
- 4 Flexible steel tapes - 10 ft.
- 2 Combination squares
- 2 Steel squares
- 2 Try squares
- 2 Block planes
- 2 Jack planes
- 2 Smoothing planes
- 1 Wrecking bar
- 2 Tin snips
- 1 Staple gun (builders)
- 2 Glass cutters
- 3 Nail sets
- 1 Pipe wrench (each) (6", 8", 12", and 15")
- 2 Compasses
- 1 Set open end wrenches
- 1 Set allen wrenches
- 1 Set box end wrenches
- 2 Hand rip saws
- 2 25ft. (each) extension cords (heavy gauge)
- 3 3-way adapters (electrical)
- 1 Hot plate
- 1 Ratchet bit brace
- 1 Set auger bits - #4 to #16
- 1 Expansive auger bit - 5/8 to 1 3/4 in.
- 1 Chart, mount, model, specimen, materials, exhibit, etc.
(1 each for clusters in this laboratory)
- 4 Wood chisels 1/4 to 1 in.
- 2 Wood vises
- 2 3/8 in. electric drills
- 2 Set drill bits 1/16 to 1/2 in.
- 4 Work benches
- 1 Bench grinder - 3 phase, 1/2 h.p.

Equipment (continued):

- 1 Drill press 15 in. floor model
- 3 Putty knives
- 2 Paint scrapers, 3 in. blade
- 2 Offset screwdrivers
- 1 Acetylene welding and cutting outfit
- 5 Welding helmets

*Materials (considered as consumable):

- 3 Eggs (assorted grades)
- Soil sampling boxes (free from County Extension Chairmen)
- Soil testing replacement materials
- Clean building sand
- Peat moss
- Potting soil
- Top soil
- Germinator pads
- Germination blotters
- Hydroponic replacement materials
- Screen - different mesh
- Hardward cloth - different mesh
- Plant labels and markers
- Bulbs (plant)
- Insect spray
- Insecticides
- Grass seed (different varieties)
- Crop and horticulture seed (different varieties)
- Vegetable and horticulture plants (different varieties)
- Plastic
- Shrubs and trees (different varieties)
- Tree wound dressing
- 7 Jiffy peat pellets
- 7 Jiffy peat pots
- Grafting wax and supplies
- Rootone (root growth hormone)
- Hanging plant basket
- Flower pots
- Burlap (for bagging and balling shrubs)
- Pinning nails (for bagging and balling shrubs)
- Fertilizer
- Lime
- Wildlife and forestry plants, trees, and seed
- Tree paint (yellow)
- Paper bags
- Food ingredients for bird feeders
- Worms for preparing worm growing projects
- Crickets for preparing cricket raising projects
- Ethylene acetate (for insect killing jars)
- Foundation wax
- Manila rope

*Consumable supplies should be purchased in quantities which are reasonable in relation to student enrollment and for instructional purposes only.

Materials (considered as consumable) (continued):

Whipping line
Plastic line
Chain or cable
Rat poison
Soap detergents (different brands)
Solder
Oxectylene tanks (small)
Sandpaper
Steel wool
Emery cloth
Wire scratch brush
Exterior plywood
Interior plywood
Miscellaneous lumber
Miscellaneous treated lumber
Bricks
Concrete blocks
Casting plastic
Plaster casting
Test tubes
Motor oil
Nails - assorted
Corrugated (fasteners)
Screws - assorted (sheet metal and wood)
Gasoline
Paints
Soil sterilization materials
First aid supplies
Hacksaw blades
Cassette tapes
Transparency materials
Magic markers
Batteries for cassette players
Tape: masking, scotch, etc.
Staples
Glue
Microscopic slides and slide materials

Audio Visuals:

Overhead projector
Filmstrip projector
Record player
35 mm projector (slides)
Projection screen
16 mm projector
8 mm closed loop projector
Projector stand (cart)
Cassette player
Flannel board
Visuals appropriate for clusters in the environmental occupational laboratory
Bioscopic visuals related to clusters in this laboratory
Microscopic visuals related to clusters in this laboratory

C. INDUSTRIAL OCCUPATIONS EXPLORATORY LABORATORY GROUPINGS

GROUPINGS:

**MANUFACTURING
CONSTRUCTION
TRANSPORTATION
FINE ARTS AND HUMANITIES**

SAMPLE ACTIVITIES

Manufacturing

1. Prepare a working drawing related to assembly line procedures and relate to occupations.
2. Read a working drawing and decide what materials are necessary for production.
3. Develop the ability to select the proper tools to build an object and relate this ability to the kinds of occupations requiring similar skills.
4. Develop an ability in skill development in use of tools and procedures used on an assembly line.
5. Take part in an assembly line production, to build a simple usable product and to understand how mass production is accomplished.
6. Develop an understanding of the interdependence of each student's particular duties in relation to producing the finished product.

Construction

1. Understand the different types of jobs a carpenter does, both skilled and unskilled and develop understanding of the use of equipment pertinent to carpentry occupations.
2. Develop a list of materials for building a simple project.
3. Correctly assemble project using drawings given.
4. Complete the finishing processes of the project.

Transportation

1. Identify common carriers, job responsibilities, working conditions and select the major parts of a vehicle which may need servicing.
2. Discuss vehicle inspection regulations and the preparation and employment outlook for jobs related to local and suburban transit.
3. Identify safety categories, types of motor carriers, and ways to package goods for shipment in highway transportation.
4. Identify railroad signals and responsibilities related to the railroad.
5. Identify riverboat operations and a typical crew of a towboat.

Fine Arts and Humanities

1. Identify the types of employment in art and the need for commercial artist in various fields.
2. Develop a portfolio of art work to use in job interviews.
3. Identify the importance of interior decorating and designs in commercial establishments.
4. Develop a knowledge of the importance of interior decorating in a high or middle income home by visiting such homes and discussing the advantages with the owner.
5. Develop a level of precision by constructing a reasonable facsimile of a window display which will include making the models and accessories to decorate the window.
6. Construct a scale model room and make the furnishing and accessories needed to decorate the room.

GROUPINGS:

**MANUFACTURING
CONSTRUCTION
TRANSPORTATION
FINE ARTS AND HUMANITIES**

Because of the nature of the activities and the equipment used in the Industrial Occupations Laboratory, it is probably one of the most hazardous of all laboratories. A safety education program is essential in managing this laboratory.

Equipment should be utilized in as many of the grouping areas as possible. Where possible and dependent upon individual expertise of the staff, other grouping activities may be performed in the Industrial Occupations Laboratory.

SPECIAL FACILITIES CONSIDERATIONS

- Size:** Determination will be dependent upon instructional activities in various grouping areas. The area should be equal to 110 sq. ft. per pupil.
- Lighting:** Adequate lighting dependent upon the specialized equipment.
- Ventilation:** Proper venting and exhaust systems.
- Electricity:** Required power for designed equipment (i.e., 1/phase 3/phase, 110v, 220v, etc.)
- Safety:** To be in conformity with O.S.H.A., Fire Marshal, State and other rules and regulations pertaining to shop areas.

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INDUSTRIAL OCCUPATIONS EXPLORATORY LABORATORY

GROUPINGS:

MANUFACTURING
CONSTRUCTION
TRANSPORTATION
FINE ARTS AND HUMANITIES

Manufacturing and Construction Items:

- 1 14" combination band saw, dozen assorted blades (metal and wood)
- 1 Electric drill 3/8"
- 1 Saber saw
- 24 Saber saw blades, assorted metal/wood
- 3 Coping saws
- 24 Coping saw blades
- 5 Hand saws (cross-cut) 3-8 points 2-10 points
- 1 Hand saw (rip 3 5-1/2 point)
- 3 Back saws
- 10 Hack saw blades, assorted (18, 24 teeth/inch)
- 3 Scratch awls
- 2 8" adjustable wrenches
- 2 10" adjustable wrenches
- 4 Nail sets (1/16, 3/32, 1/8)
- 4 Center punches
- 2 Vise grip pliers 10"
- 2 Countersinks, metal
- 2 Countersinks, wood
- 1 Carving set (x-acto)
- 1 Wire brush, hand
- 5 24" steel bench rules
- 2 8' push-pull tape measures
- 5 16 oz. hammers
- 2 Aviation snips, combinations
- 2 Tin snips, 14"
- 1 Trammel point set
- 7 File with handles, 18" bastard, mill, single and double cut
- 2 Cabinet rasps, half-round
- 2 File cards
- 4 8" try squares
- 5 Screwdrivers (standard sizes)
- 2 10" braces
- 2 8" surform planes
- 2 Block planes
- 2 Wood chisel sets, 1/4", 3/8", 1"
- 1 Expansion bit, 3/4", 1-1/2"
- 2 Drill (twist) bit 1/16" 3/8" by 32"
- 2 Sets auger bits, 4 to 16
- 1 Revolving hand punch
- 1 Oilstone combination 6" x 2" x 1"
- 2 Sets taps and dies, 1 NF and 1 NC
- 2 Trowels london 5" x 12"
- 1 Set power speed wood bits 1/4" to 1" by 1/8" increments
- 1 6" jointer
- 2 6" spacing rules or stack pole
- 1 48" spirit levels, wood

Manufacturing and Construction Items (continued):

- 4 Corner blocks (masonry)
- 3 Brick hammers
- 1 Chalkline
- 2 Jointers 3/8" x 1/2"
- 2 Plastering trowels 11" x 4-3/4"
- 2 Utility brushes
- 2 Buckets (8 qt.) 10-1/8" Dia.
- 1 Water hose (25 ft.)
- 1 Mortar hoe
- 2 Conduit benders, 1/2" and 3/4"
- 2 Pop rivet guns
- 1 Wire stripper 8-1/2"
- 1 Armored cable cutters
- 1 Fusible main serv. boxes
- 4 1-1/2" deep 4" octagon boxes
- 4 Switch boxes
- 4 Toggle switches
- 4 Duplex flush receptables
- 4 Electrician 8-1/2" pliers
- 4 Needle nose 6" pliers
- 2 Electrician tool pouches
- 6 Silk screen frames, 12" x 18" fitted with organdy
Handcut film with needed chemicals
- 1 Offset press (10" x 15") with three cylinders to teach offset process
- 1 Plate maker
- 1 Plate sink
- 1 Belt sander 4"
- 1 Orbital sander
- 1 Circular saw 10"
- 1 Comprehensive sheet metal equipment bench
(brake, shear, bender, notches, roller)
- 1 Drill press, pedestal 15"
- 1 Grinder 7"
- 3 Drawing boards 20" x 24"
- 3 Triangles 30° x 60°
- 3 Drawing instrument sets
- 25 Safety glasses and other devices required by State Law

Transportation Items:

- 1 Standard 3/8" drive socket set, including deepwells
- 1 Standard 1/2" drive socket set
- 1 Set combination wrenches 1/4" to 1-1/16"
- 2 Mechanics stethoscopes
- 1 Self-calculating anti-freeze tester
- 1 Battery brush cleaner
- 1 Small motor tool panel of assorted tools
- 1 Fly wheel puller
- 1 Pour spout
- 1 Battery filler
- 1 Set allen wrenches
- 1 Compression tester
- 2 Spark plug adjusting tools
- 1 Feeler gauge
- 1 Timing light, power
- 3 Oil cans, assorted
- 1 Grease gun (cartridge type with flexible hose)

Suggested Supplies List
Industrial Laboratory:

- 4 Gal. latex paint (instructor's choice)
- 3 Gal. turpentine
- 3 Gal. brushing lacquer
- 5 Gal. lacquer thinner
- 6 Qts. oil stain (instructor's choice)
- 5 Pint cans of wood filler
- 1 Doz. 1" brushes
- 4 Boxes assorted flathead screws
- 4 Boxes assorted nuts and bolts
- 4 Boxes assorted sheet metal screws
- 6 Boxes of coping saw blades
- 1 50 lb. carton #8 nails
- 1 50 lb. carton #16 nails
- 1 5 lb. box roof nails
- 4 Boxes 1/2" x 18" gauge brads
- 4 Boxes 1" x 18" gauge brads
- 2 5 lb. boxes 8d finishing nails
- 1 Box of hack saw blades
- 2 Boxes 1/8" pop rivets
- 1 Pop rivet gun

*Note: All items based on 1 year of operation.

- 2 2/0 garnet paper (100 per box)
- 3 6/0 garnet paper
- 3 Fine emery cloths
- 3 Medium emery cloths
- 3 Gal. white glue
- 2 Qts. contact cement

Quantities will be dependent upon activities planned by instructor.

Need 2" x 4"s; 2" x 6"s for construction as well as plywood for floor covering.

Other Construction Manufacturing Items:

Sand
Brick
Cement
Sheet metal
Mortar
Lime
Concrete
Wiring

Fine Art Items:

Quantities also dependent upon activities planned by instructor.

Inks
Papers
Solvents

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D. SERVICE OCCUPATION EXPLORATORY LABORATORY GROUPINGS

GROUPINGS:

**CONSUMER AND HOMEMAKING
HEALTH
PERSONAL SERVICE
PUBLIC SERVICE**

SAMPLE ACTIVITIES

Consumer and Homemaking

1. Make a market list for buying vegetables and/or fruits for salads for a family of four for one meal.
2. Prepare a vegetable and fruit salad that looks appetizing and tastes good enough for someone to purchase.
3. Perform activities of preparing and providing family restaurant service.
4. After studying recipes, a determination of how much food should be ordered to take care of the reservations for dinner, as well as extra food for restaurant workers.

Health

1. Obtain an accurate temperature, pulse and respiration rate of an adult. What is the average temperature, pulse, and respiration of the human body?
2. Demonstrate the abilities of a physical therapist to assist another person to move his various joints through the range of motion exercises.

Personal Service

1. Make a molded or congealed gelatin salad using a variety of food combinations.
2. Make cardboard cutouts of hairstyles and place them over a manikin's head. Set a wig in any particular style.

Public Service

1. Demonstrate the ability to effectively communicate with traffic units through signals and gestures for the purpose of traffic control.
2. Discuss with local state police trooper traffic control problems at intersections, and problems in communicating to the traffic unit what the traffic officer wants them to do.
3. Develop an awareness of the structure of fire departments including a breakdown of jobs, equipment, services, terminology, and to be conscience of the fire fighters importance to society.
4. Set up and act out fire situations. Fire call coming in, being received, and procedure for fire protection put into effect.

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GROUPINGS:

CONSUMER AND HOMEMAKING
HEALTH
PERSONAL SERVICE
PUBLIC SERVICE

Equal time should be given to every grouping in Service Occupation Laboratory. This can be done when laboratory activities in each grouping are going on simultaneously and all students rotate to a new grouping at the same time.

SPECIAL FACILITIES CONSIDERATION

- Size:** Sample layout 1500 sq. ft.
Minimum layout 900 sq. ft.
- Lighting:** 30-50 ft. candles - glare is minimum requirement, additional footage may be desirable for special areas.
- Ventilation:** Adequate ventilation to handle specified equipment.
- Electricity:** Required power for designated equipment (1 / phase, 3 / phase).
- Safety:** Safety precautions to be in conformity with existing rules and regulations.

SERVICE OCCUPATIONS EXPLORATORY LABORATORY

GROUPINGS:

CONSUMER AND HOMEMAKING
HEALTH
PERSONAL SERVICE
PUBLIC SERVICE

Consumer and Homemaking Items:

- 1 Skillet (electric)
 - 1 Can opener
 - 1 Coffee maker
 - 1 Waffle baker/grill (optional)
 - 1 Knife sharpener
 - 1 Portable mixer
 - 1 Toaster
 - 2 Skillets, 8" and 10"
 - 2 Sauce pans; 1 qt. and 2 qt.
 - 1 Double boiler
 - 1 Pizza pan
 - 1 Loaf pan
 - 2 Cookie sheets
 - 4 Cake pans (2 round and 2 square)
 - 1 Rectangle cake pan (9" x 12")
 - 2 Muffin tins
 - 1 Tube cake pan
 - 1 Set mixing bowls
 - 1 Rolling pin
 - 1 Cookie press
 - 1 Cake decorator set
 - 1 Candy thermometer
 - 1 Pastry brush
 - 2 Spatulas (egg turners)
 - 2 Rubber spatulas
 - 1 Potato peeler
 - 1 Vegetable brush
 - 1 Lemon squeezer (juices)
 - 2 Sets measuring spoons
 - 2 Sets dry measuring cups
 - 2 Sets liquid measuring cups
 - 2 Wire whips (optional)
 - 1 Rotary beater
 - 1 Soup ladle
 - 2 Slotted spoons
 - 1 Pizza cutter
 - 2 Cake racks (cooler)
 - 3 Pie pans (metal or aluminum)
 - 1 Strainer wire
 - 1 Colander
 - 2 Sifters
 - 1 Canister set
- Tablecloths or placemats
Silverware (service for 6) and serving pieces
Dinnerware (service for 6) and serving pieces

Consumer and Homemaking Items (continued)

- Glassware (service for 6) 2 pitchers, metal
- 2 Serving trays
- 1 Dish pan
- 1 Dish drainer
- 1 Doz. dish cloths
- 1 Doz. dish towels
- 1 Doz. hand towels
- 1 Large wastebasket (with lid)
- 1 Garbage can

Clothing Services Occupations Items:

- 3 Sewing machines
- 1 Ironing board
- 1 Steam iron
- 1 Pressing ham
- 1 Sleeve board
- Straight pins
- 3 Pairs scissors and shears, variety of sizes
- 1 Pair pinking shears
- 3 Tape measures
- 2 Yardsticks
- 1 Hem marker
- 1 Tracing wheel and paper

Housing Service Occupations Items:

- 1 Carpet sweeper
- 2 Brooms
- 1 Wet mop
- 1 Dry mop
- 1 Bucket
- 1 Dust pan
- Sponges, variety of sizes
- Various types of cleaning and laundry supplies

Health Occupation Equipment Items: (Minimum)

- 1 Hospital bed
- 1 Folding screen
- 1 Stethoscope
- 1 Teaching stethoscope
- 1 Sphygmomanometer
- 1 Overhead light (optional)
- 3 Bedspreads
- 6 Sheets
- 6 Pillow cases
- 4 Towels
- 4 Washcloths
- 1 Patient gown
- 1 First aid kit
- 6 Thermometers
- 1 Clinical scale
- 1 Hot water bag
- 1 Ice bag

Health Occupation Equipment Items: (continued) (Minimum)

- 1 Heating pad
- 1 Bed pan
- 1 Urinal
- 1 Bedside step stool
- 1 Emesis basin (kidney-shaped basin)
- 1 Robe
- 1 Pair of slippers
- 1 Over bed table

Public Service Equipment Items:

- 1 Resusci-Annie
- 1 Resusci-Baby
- 1 Cardiopulmonary resuscitation unit
- 1 Chest cutaway
- 1 Overhead projector
- 1 Movie projector
- 1 Slide projector
- 1 Latent fingerprint lifting kit
- 1 Plaster of paris - for lifting shoe and tire prints
- 1 Comparison microscope
- 1 Breathing apparatus (one unit)
- Access to darkroom and photographic supplies

E. CAREER RESOURCE CENTER

CAREER RESOURCE CENTER

The career resource center will supplement and must be closely correlated with the activities in the exploratory laboratories.

When selecting materials for the center, instructors in the exploratory areas must be consulted. Students should be scheduled regularly through the center, as this will enable them to study about opportunities related to laboratory activities during the time they are engaged in "hands-on" experiences.

Many occupational materials are available on the market today and it would be wise to scrutinize them closely. Only materials that relate to the ongoing career groupings should be purchased. The following list will give the local administrator or teacher some idea of what is available. The L.E.A. must choose materials that will best meet its needs.

Note: The materials listed in this guide are those which are most familiar to the West Virginia Department of Education and this is not intended to discredit any unlisted materials.

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CAREER RESOURCE CENTER

Usually hardware is available in the media center at the local school and duplication is unnecessary.

Equipment:

Filmstrip projector
Record player
Large screen
Video tape equipment
Portable screen
Slide projector
Cassette recorder
Movie projector
Filmstrip viewers
Filmstrip cabinet
Paper cutter
Duplicator

Filmstrips:

Success Stories Education Projections Corporation

Includes self-analysis manuals and teacher's manual. Each filmstrip in this series tells the story of someone who went back to school or continued training to qualify for a job that would provide a good future and interesting work. It helps the student evaluate his personal preferences and to create an awareness of the need for additional study and training.

Are You Looking Ahead? Eyegate

This series presents a preview of some of the interesting job opportunities available to high school students. No attempt is made to teach the vocations. The emphasis is on the qualifications needed to get and hold the job.

Hospital Job Opportunities Eyegate

This series explores the expanding job opportunities in our modern hospitals. Advanced technology has created jobs that did not exist a few years ago. The hospital world is clearly photographed and described to show some of the important jobs and create a vital interest in them.

Calling the Fire Department National Fire Protection Association

A dramatic film for adult and children's audiences showing how important it is to call the fire department when fire is discovered or suspected. Illustrates proper use of telephones and street boxes. It includes also a message on false alarms.

For Home Escape Planning National Fire Protection Association

A dramatic film showing the dangerous and possibly fatal situations facing families who have failed to plan escape measures. Illustrates the basics of planning for one- and two-story homes, as well as apartments.

Coordinated Fire Attack Iowa State University

Where's the Water? Iowa State University

Pulse of Life American Heart Association

Sight Sound Series International Association of Chiefs of Police

World of Work: Vocational Opportunities Eyegate

This series attempts to bridge the information gap between schools and the business community. The photographs show clearly how the worker goes about his everyday tasks. Although the student may be completely ignorant about certain job opportunities, these 14 filmstrips will show these jobs and create interest in them.

The ABC's of Getting and Keeping a Job Eyegate

This series of 8 sound filmstrips can be used in conjunction with such subjects as social studies, English, occupational or career education, vocational guidance. Designed for all students who will be entering the labor market.

Careers in Aerospace Eyegate

These films aid students considering jobs in airlines and the aerospace industry. Key jobs requiring various skills are illustrated by filming airline employees under actual working conditions. The training of highly skilled workers for specialized positions are photographed in detail so that students can better understand the processes involved.

Basic Office Practices and Procedures Eyegate

This set is designed to teach and familiarize the future secretary with situations found outside the textbook. This series is specifically designed to teach the student to cope with the real office problems she will meet in her first secretarial job.

Building Trades Workers Eyegate

This series introduces the student to the many job opportunities in the building trades. Informative pictures allow the viewer to see the step-by-step procedure concerning each job and hear valuable narration about each job area.

Field Trip to a Coal Mine Eyegate

Field Trip to an Oil Well Eyegate

These filmstrips take the class to sites generally unavailable for actual trips. Through careful photography one sees each location and process more clearly than if they were there. The narration, art, and exploration of each location has been prepared in cooperation with the experts who run these operations and installations.

Occupational Education Eyegate

This series helps the student to contribute to the environment in which he will be living and working. The skills presented will fit the student with the necessary tools for him to be able to reach his maximum level of vocational competency.

Vocational Decisions Guidance Associates

The variety of vocational avenues open to today's students is discussed. Emphasis is placed on considering abilities, interests and training when making vocational decisions.

Jobs for You: It's Happening in Home Economics Guidance Associates

This filmstrip explores the hospitality industry (food service, food preparation, house-keeping), extension service (nutrition, home management, child development), and fashion (textiles, design). This filmstrip emphasizes that home economics should be viewed as a study of human relationships and resources.

Why Work at All? Guidance Associates

Young people discuss their feelings about job satisfaction, material rewards, work and personal growth; emphasize their own experiences while discussing work as an outlet for psychological drives, enthusiasm, self-discipline; as factors in job satisfaction.

Jobs and Gender Guidance Associates

In-depth interviews challenge stereotypes about "man's work" and "woman's work". Various women and men explain their decisions to work in traditionally "all men" or "all women" occupational fields.

Preparing for the World of Work Guidance Associates

Part I offers sensible advice on evaluating one's capabilities and aptitudes; introduces vocational education as an integrated learning program involving classroom, shop, laboratory and actual job situations. Part II investigates the five major areas of vocational education: home economics, trade and industry, agriculture, distribution, business and office.

What You Should Know Before You Go to Work Guidance Associates

Part I explains ways to begin narrowing career choices; discusses positive work attitudes; and discusses union memberships. Shows how a young file clerk, nurse's aide and airline cargo loader built fine careers from unskilled entry level jobs. Part II offers clear advice on finding a job, job interviews, flags on-the-job don'ts such as taking extra time, failing to call in when sick. Peer interviews stress ways to advance more rapidly in typical situations.

Preparing for the Jobs of the 70's Guidance Associates

Part I shows how trends in space exploration, computerization, population growth, undersea farming and new product and service development will effect tomorrow's job market. Students see and hear tomorrow's jobs described by young people who are already filling them. Part II focuses on atomic technology, its subfields and developing staff needs, explores new opportunities in health, medicine, law, education, sales and building trades.

Choosing Your Career Guidance Associates

Part I describes six general personality types: social, intellectual, conventional, enterprising, realistic, and artistic; relates them to broad career areas. Part II helps students evaluate their personality in these terms.

Exploring Careers Guidance Associates

This filmstrip is designed to provide the student with the facts by which he may evaluate his or her own individual chances of satisfaction and success in specific job situations.

Job Opportunities Now Guidance Associates

An informative series of filmstrips introduces students to the world of work. Full color on-site photographs and recorded narration provide students with information relative to job opportunities in several fields and stress jobs which do not require a college degree.

Foundations for Occupational Planning Guidance Associates

This set of filmstrips aids students in evaluating their own individual characteristics and relating them to the world of work.

Choosing a Career Guidance Associates

This filmstrip examines important factors to be considered when choosing a career. It gives the options of young people from many ethnic and socio-economic backgrounds.

Learning to Use a Sewing Machine Singer

Full-color photographs, including many close-ups, portray habits that must be developed to insure efficient machine operation. Simple exercises orient students to essential principles being taught. Photographs are of the Singer Touch and Sew Sewing Machine.

Introduction to Business Machines Singer

A comprehensive overview of all major classes of machines used in today's business offices. Full color photographs portray machines in office settings serving typical office needs. The beginning student is made familiar with each type of machine and its capabilities.

Liking Your Job and Your Life Guidance Associates

Students meet a black construction worker enthusiastic about outdoor work that demands highly specific skills; a female worker who enjoys intricate work and being able to give her family a better living standard; a dedicated Spanish-American community worker dealing with people, power and social change; a self-employed TV-radio repairman who sets his own hours, takes pride in his craftsmanship and independence relate their work experiences in this filmstrip.

Trouble at Work Guidance Associates

Explores typical on-job conflicts and tension between: the apprentice mechanic impatient with menial chores and the master mechanic who progressed slowly and expects others to do the same; the hospital worker with family problems and the supervisor who can't tolerate excessive absences; the mistake-prone salesgirl and the supervisor whose manner discourages her from asking questions; the filling station attendant, content with low pay and easy work and his ambitious pal looking for a better life.

On the Job: Four Trainees Guidance Associates

This program builds strong personal portraits to inspire students identification with various trainees, awareness, and also demonstrates: (1) Poor school performances and lack of diploma need not preclude successful career development. (2) On-the-job learning is very different from textbook learning. (3) Discovery of a youngster's job aptitudes is a major step toward career achievement. (4) "Upgrading" training programs exist in a variety of employment fields throughout the United States.

Careers in Materials Engineering: The Aerospace Age Guidance Associates

Students see the importance of metallurgy in present space projects: Saturn/Appollo and the interplanetary Nova vehicle, in fuels and stressbearing parts, wiring and refraction. They explore metallurgy as related to consumer goods production, view patterns of international cooperation in metallurgy. Finally, students learn about careers now opening in the three main branches of metallurgy: extraction, research and industrial.

Your Future in Elementary Education Guidance Associates

This program examines personal qualities which make good teachers and strongly emphasizes the intangible rewards of teaching. An undergraduate describes her liberal arts-based curriculum, courses in education and student teaching. Your group learns three basic principles of teaching: clarity, patience and responsibility. Students examine central objectives of early childhood education, development of subject areas and learning skills program also examines improving salaries, tenure and other benefits, post-graduate work in key specialties, and con-
stant work in many areas of elementary education.

Jobs for High School Students Guidance Associates

(Part I) Helps students explore their own reasons for wanting to work and helps them distinguish superficial job benefits such as pocket money from more important benefit such as experience. Points out common experiences and abilities which are often positive job qualifications in procuring work.

(Part II) Offers practical tips for locating job possibilities in the community such as preparing for and following up the job interview. Discusses many jobs from babysitting and waiting on tables to construction, trade, industry and retail sales.

An Overview of Technical Education Guidance Associates

Part I describes the technical or "para-professional" job level, also examines technician's role in supply, farm marketing, industrial production and distribution, chemical, electrical and metallurgical research, civil service, health and medicine, data processing, accounting, advertising and child development for benefit of students interested in technical or vocational training.

Part II gives detailed information on vocational education programs which prepare students for technical jobs. This filmstrip emphasizes availability and advantages of technical careers for students of many backgrounds.

A New Horizon: Careers in School Food Service Guidance Associates

A school food service director describes daily duties in dietetics and menu planning, staff management, purchasing and accounting, classroom teacher, controlling, kitchen design, sanitation, use of new equipment, community work, and cooperation with faculty. This filmstrip also emphasizes the great and growing need for trained school service personnel and stresses personal and financial rewards.

Are You Looking Ahead? Eyegate

This series of 10 captioned filmstrips presents a preview of some of the interesting job opportunities available to students. Emphasis is on the qualification needed to get and hold a job.

The Metric System Educational Media

These filmstrips introduce the units that are commonly used in the metric system, and show the relationships of the units of length to those of mass and volume. The final filmstrip deals with the advantages and disadvantages of converting to the metric system. A set of activity cards, providing interesting practice with metric measurement, accompanies the filmstrips. Also provided is the instant answer metric converter, which converts metric measures to English and English measures to the metric system.

Driving as a Career Educational Media

The filmstrip explores the three major categories of driving: trucks, buses, and taxis. It describes qualifications, hours, approximate wages, training, and the general advantages or disadvantages. The strip emphasizes that some of the qualities necessary to all driving jobs are mature judgment, patience, and courtesy.

Nursing as a Career Educational Media

This series examines the qualifications, preparations and required education, duties and responsibilities, and areas of specialization. Explanations detailing how each career has its own unique advantages and opportunities are provided.

Daily Office Procedures J. W. Walch Publishing Company

A set of 20 slides depicting typical procedures found in a daily work day in a business office. Activities shown are typing, transcribing, dictation, filing, answering service, and interviewing.

Career Clusters Educational Properties Incorporated

A series of filmstrips showing the 15 different occupational clusters as enumerated by the United States Office of Education. Also, various jobs are shown in each cluster.

The Evolution of American Industry Society for Visual Education

The Evolution of American Industry, Enterprise and Welfare (1650-1960's). The following areas are covered in this filmstrip series: (1) The essence of our American heritage from colonial antecedents through our own times. (2) Photographs, dioramas, paintings and documents, dedicated educators who helped start America on the road to becoming the world's most progressive nation. (3) Shows how agriculture, commerce, and public welfare gave rise to the high standard of living in the United States.

Artist at Work Jam Handy

Explains and shows examples of various artists working in normal workday situations. Each artist discusses various phases of his particular job and his sentiments toward his work. Procedural details are given but emphasis is placed on exposing students to the various art careers.

A Career in Nursing Pathscope Educational Films

Describes the establishment of nursing as a profession and reports its enormous growth with a vast range of opportunities for both men and women. Question-and-answer interviews with people in nursing clarify exactly what the nurse does - how the nurse functions within a health team; the variety of hospital nursing duties - general, surgical, children's obstetrical, emergency, operating - and examines nursing outside the hospital - the clinic, doctor's office, special duty, psychiatric, public health, visiting nurse. Interviews reveal the common bond of conscience: the feeling of responsibility shared by all nurses.

A Career in Journalism Pathscope Educational Films

Shows the sweeping courage of journalism, its standing as an influential profession in a democratic society, and its need for new people to handle the information explosion. Interviews and on-the-spot photography with small and large organizations throughout the country highlight the kind of work done by reporters, editors, managing editors, specialized writers, foreign correspondents, photo-journalists, broadcasters for newspapers, magazines, radio, television, news services. Clear questions aimed at the viewer stress the personal qualifications and abilities necessary for a successful journalist.

A Career in Computers Pathscope Educational Films

Recounts the rapid rise of electronic data processing, pointing out its significance in the modern world - its myriad applications in coping rapidly with calculations and information - a respected field of work with a growing future. These machines have created an entire gamut of new jobs, which are shown briefly - systems analysts, programmers, field engineers, computer operators, maintenance technicians, keypunch operators, verifiers, documents librarians, tape librarians. Each job has its own requirements for personal abilities and qualifications. Each has its own satisfactions.

A Career in Business Administration Pathscope Educational Films

Redefines "Business as the state of being busily engaged in something." Interviews and location photography show how business know-how today applies to an exciting array of fields

from music and the arts to education and religion as well as to banks and the organizations which sell goods or services - from the small business to the huge corporation. Today administrators must be socially involved and must have the ability to interact with the world outside the business itself. In the filmstrip, men and women in the field discuss the attractions of business administration and the personal qualifications required for success.

A Career in Sales Pathscope Educational Films

Demonstrates the vast variety and scope of careers in sales, recounting the vital role of salesmen in our history, and assessing the prestige of sales in today's world. The character and qualities of the old yankee peddler still make the good salesman. Discussion of desirable personality traits and of the opportunities, challenges, and rewards of sales careers, continues in interviews with a retired sales manager, a spokeswoman for Avon, the owner of a neighborhood store - pointing up the tradition of independence and perseverance, and the constant demand for the good salesperson.

A Career in Law Enforcement Pathscope Educational Films

Examines in detail the challenges, problems, and dangers, broad functions, satisfactions and drawbacks of being a policeman or policewoman - stressing the need for each one to be able to handle a great variety of duties, emergencies and problems - not all concerned with crime or violence. Interviews reveal the nature of the many functions performed by police in a small community, in big city police departments, by state troopers, by patrol women. All stress police work as a job which combines personal challenge, on duty and off duty, with a chance to help society where it really counts - on the people-to-people level.

A Career in Construction Pathscope Educational Films

Scans the wide array of jobs in this the nation's largest industry which employs the most people and generated the largest dollar volume of work. Interviews with people at different steps of the occupational ladder discuss opportunities in the four major areas - residential building, general building, highway construction, heavy construction - and point out the great variety of jobs at all levels, the actual workday, activities and responsibilities, the drawbacks and the satisfactions. Personal qualifications and aptitudes which can lead to success in construction are revealed in the interviews.

A Career in Transportation Pathscope Educational Films

Depicts the vital role of the transportation industry in everyone's life - moving people, goods and materials for short distances and long. Interviews and on-the-spot photography investigate the five major areas - air, railroads, trucking, merchant marine, municipal public transportation - describing types of occupations at all levels and the advancement opportunities, showing something of the duties and responsibilities in various kinds of jobs. The skills, aptitudes, personality traits and physical qualifications advantageous to this field are summarized.

A Career in Health Services Pathscope Educational Films

Presents today's dramatic changes in health care, discussing the wide range of fields open for health professionals who now take over many functions formerly performed only by doctors, emphasizing the critical shortages of personnel. Jobs in and around hospitals are many and varied - technicians, laboratory personnel, social workers, dieticians, administrators, librarians; ambulance personnel, executive housekeepers - the list is long. Possibilities outside the hospital environment - in industry, public health, volunteer services, government - require many of the same types of personnel but add others as in environmental health, health education, accident prevention control, in doctor's offices.

A Career in Education Pathscope Educational Films

Reviews the influence of great teachers in the historic past on western civilization and looks closely at three phases of the profession today - the teacher, the administrator, and the

para-professional. Teaching is examined at the elementary, secondary, and college levels. In-depth interviews with teachers in a variety of schools - teaching diverse subjects at different levels - demonstrate what the teacher does: The role in developing interest and skills; in aiding students' socialization and sense of responsibility; activities of the typical workday, other interviews consider the duties, satisfactions and problems of administrators and para-professionals.

A Career in Agriculture Pathscope Educational Films

Describes the importance and scope of agriculture in America today, examining the wide variety of jobs from work on the farm to jobs in agricultural industry or business. Interviews with farmers show the great variety of farm types and demonstrate typical farm activities, rewards and drawbacks, personality traits desirable for farm life. Other interviews disclose many possibilities in agriculture - the expanding field of the professional farm manager, the grain handler, sales and other positions in business or industry dealing with agriculture, farm equipment maintenance, harvesting services, and the governmental positions including county agents and extension personnel.

Careers in Community Service Pathscope Educational Films

Details the variety of occupations it takes to make a community function. Whether its a small town or a large city, people today demand certain things from the community they live in and these things are explained in this filmstrip. Part II discusses the importance of community work, the type of work that is done and the methods of entering the field. Job security, opportunities for advancement, in-service training, the variety of work available and the difficulties as well as the satisfactions are discussed by officials and workers who see community work as a chance to build careers while contributing to the betterment of human life.

Careers in Food Services Pathscope Educational Films

Defines the wide range of jobs and opportunities involved in distributing, preparing and serving food in a variety of places from ice cream parlors and gourmet restaurants to large institutions and franchises. Real people working on the job discuss both the advantages and disadvantages of their work to help students make realistic choices.

In Part II the food service opportunities, satisfactions, challenges and types of work involved are covered in interviews that focus on a man who started his own restaurant as well as people who do not directly work with the public. These interviews suggest some ways of entering the field, outline qualifications, skills and knowledges needed for a food service career.

Careers in Graphic Arts Pathscope Educational Films

This filmstrip points out the vast creative possibilities of a field that influences so much of the way we think and act. Interviews with graphic artists in different fields show how some started right out of high school while others went to college or art school. Interviews throughout both parts highlight some of the duties and responsibilities of graphic artists in specific jobs from the creativity of formulating ideas to the detail of designing layouts and mechanics. How the work contributes to society; the satisfactions gained as well as the difficulties and disadvantages encountered, and the personality traits, interests and aptitudes needed are also discussed.

Careers in Fashion and Textiles Pathscope Educational Films

This filmstrip takes a look at people who provide one of the nation's most important services, by designing, manufacturing and selling the clothes we wear and the cloth we need for countless other uses. Interviews throughout both parts of the program discuss the personal satisfactions derived while showing the variety of jobs and the necessary skill, aptitudes and personal-

ity traits needed. Real people at work in the fashion and textile industry talk about how they got started, the opportunities for advancement, what kinds of people they work with, and what they dislike, and like about working this field.

Careers in Repair Work Pathscope Educational Films

This filmstrip outlines the immense range of opportunities in what is possibly the fastest growing sector of the American economy. Interviews throughout both parts of the program discuss the personality traits and aptitudes needed as well as the satisfactions and disadvantages of a wide range of jobs in the field. Repair work is dealt with on two levels: domestic and industrial. Domestic repairs cover machines such as television, stereos, air conditioners, and washing machines. Industrial refers to larger machinery from printing presses to computers.

Careers in Government Services Pathscope Educational Films

This filmstrip covers the many jobs listed by the civil service commission and ranges from work with the Veterans Administration and the Internal Revenue Service to countless other governmental agencies. The types of jobs vary from high level administrators and officials to clerical workers and bookkeepers. While many of the occupations are similar to those with industrial or commercial enterprises, interviews throughout stress the strong job security, great opportunities for advancement, and fringe benefits—all of which contribute to the high professional standards of working with the government.

Careers in Conservation Pathscope Educational Films

This filmstrip explores the increasing vital role of conserving the world's natural resources. Interviews throughout both parts of the program stress the wide variety of opportunities available to high school as well as college graduates and help students gain a good overall view of the field. The talents, skills, aptitudes, and personality factors needed as well as the frustrations and rewards are covered.

Careers in Leisure Time Industry Pathscope Educational Films

This filmstrip recounts the rapid rise of recreational and leisure time activities and the resulting need for people to work in this field. Interviews with people actually at work providing these services help today's young men and women gain an appreciation for the personality factors, aptitudes, knowledge and skills that will help them decide whether the leisure time industry will provide suitable life style for them. Suggestions are given on how to get started, what the various life styles are like, and what the future may hold.

Careers in Social Work Pathscope Educational Films

This filmstrip depicts the vital roles of people working for the betterment of society by helping individuals. Scenes show such activities as teaching at a day care center, working with the urban or rural poor, helping drug addicts begin life again, or serving as social or caseworkers in various welfare agencies. The interviews deal with people involved in the day-to-day challenges as they discuss why they are concerned about social work and what it takes to make a difference. Through interviews students are shown some of the ways to enter the field, the skills and knowledges needed to enter and be satisfied as a social worker.

Careers in Show Business Pathscope Educational Films

This strip deals with the important role of entertainment. This program looks at show business opportunities from two different aspects - the performers and those who work backstage. Such careers as musician, actor, comedian, makeup artist, lighting and sound engineers, and cameramen. Interviews throughout both parts of the program deal with a wide cross-section of people in the entertainment field.

Careers in Automobile Service and Repair Pathscope Educational Films

This filmstrip explores the wealth of occupations available in the automotive service industry and gives practical suggestions to students on how to get started and what the work is like. The interviews discuss what it takes to make a good mechanic, the experience, skills and knowledge needed to get started, the opportunities for in-service training, and the different types of organizations to work for, as well as the difficulties, frustrations and rewards of automotive work as a way of life.

Careers in Public Utilities Pathscope Educational Films

This filmstrip describes the importance, the problems and the challenges of providing the telephone service, electrical power and gas energy that keeps America running smoothly and enables us to enjoy, in a very practical way, the technological advances of the modern world. Interviews with people actually at work with the various public utility companies outline some of the methods of entering this field as well as the job security, opportunities for advancement, and possibilities for in-service education.

Booklets:

Abnormal People, How to Handle West Virginia Department of Education

Accident Investigation West Virginia Department of Education

Communications; Patterns, and Incidents West Virginia Department of Education

Criminal Law West Virginia Department of Education

Firearms West Virginia Department of Education

Investigative Techniques West Virginia Department of Education

Laboratory Aids West Virginia Department of Education

Law of Arrest, Search and Seizure West Virginia Department of Education

Motor Vehicle Laws West Virginia Department of Education

Narcotics West Virginia Department of Education

Officer in Court West Virginia Department of Education

Police Ethics West Virginia Department of Education

Psychology in Law Enforcement West Virginia Department of Education

Rules of Evidence West Virginia Department of Education

Traffic Law Enforcement West Virginia Department of Education

Governmental Structure West Virginia Department of Education

Fingerprint Identification West Virginia Department of Education

Job Family Series Booklets Science Research Associates

The booklets group jobs by common factors such as interest and skill to help broaden student's occupational considerations. Highly informative descriptions of work situations from interviews with workers and observations are covered. Wide ranges of jobs are covered at all levels.

Fire Service Entry Level I West Virginia Department of Education

Fire Service Entry Level II West Virginia Department of Education

ABC's of Hand Tools General Motors

Can I Be a Draftsman? General Motors

Can I Be a Technician? General Motors

Can I Get the Job? General Motors

Can I Be a Scientist? General Motors

Precision: A Measure of Progress General Motors

Career Awareness - Comic Booklets King Features

Magazine:

Career World, The Continuing Guide to Careers Curriculum Innovations, Inc.

Books:

Reference Volumes of *Career Opportunities for Technicians and Specialist* Harper and Row Publishers

Each volume contains photographs of workers in actual work experiences with detail information and descriptions of covered jobs, also includes earnings and benefits, educational requirements, type of work done, necessary personal qualities, working conditions, future outlook and other vital information.

Career and Occupational Series Books Harper and Row Publishers

These books explain the basic foundation of occupations for a student's reading. Each book explains duties, actual work performed, training needed and desired, and other work characteristics of that particular job. The author also tries to give the students a glimpse of working conditions actually experienced while on the job.

Emergency Care - Student Robert J. Brady Company

Emergency Care - Teacher Robert J. Brady Company

The World of Communications McKnight Publishing Company

Exploring Careers in Child Care McKnight Publishing Company

A Career in Engineering Pathescope Educational Films

Portrays this area of many possibilities which touches on so many diverse aspects of life today - an area which will have even greater applications in the future as science and technology continue to advance. Location photography shows engineering applications of science in such spectacular accomplishments as manned expeditions to the moon - and, more importantly, as a key factor in the handling of major human problems such as water shortage, waste disposal, utilization of resources, development of transportation and communications.

World of Work Webster Division, McGraw-Hill Book Company

The emphasis of the series centers on actual job occurrences, rather than specific occupational information (although vocational exploration is available to some extent.) The fifty stories are grouped into three sections - Getting the Job, Keeping the Job, and Advancing on the Job. All are aimed at developing student's potential for success in the world of work. Written on a fifth grade reading-level, many of the stories are open-ended to prompt classroom discussions.

Occupational View Decks Chronicle Guidance Publications Inc.

The Chronicle Occupational View Deck is a system for matching personal characteristics or preferences with occupations requiring those particular qualities. The View Deck is a tool to be used for exploring occupations and their relationship to personal characteristics and preferences.

Simulation Games in Career Education Household Finance Corporation

Simulation Games permit the kind of discovery learning that occurs when students are involved with the process of decision-making in a realistic relevant and exciting manner.

Accent World of Work McKnight Publishing Company

This series deals with social skills related to the work world. The areas of interviews, pay, promotions, employment applications, personal records, job qualifications, job choices, etc. are presented in realistic situations, students are able to understand the importance of any necessity of work-related personnel operations.

Succeeding in the World of Work McKnight Publishing Company

This career education textbook brings together the essentials every worker needs to understand in order to be knowledgeable on a job. It goes beyond the student's need-to-know of technical skills. The text not only covers the mechanics of how to find and apply for a job, but also provides realistic and relevant information necessary for the individual to be happy on-the-job. Various occupational fields are considered to assist the student in determining the most appropriate for him.

Introduction to Health Careers McKnight Publishing Company

The students will set up health care clinics in ophthalmology, hematology and radiology. They will study the cardiopulmonary systems and learn of the various body functions. They will become acquainted with burns, blood pressure and types, and different trauma situations. Through role playing activities with life-like equipment and supplies, your students will become sufficiently aware of their potential future throughout the health care industries.

Introduction to Business and Office Careers McKnight Publishing Company

Students will be associated with business and office procedures and careers, including the most important task of applying for a position, being interviewed (in a role playing situation), and finally to the point of either accepting or rejecting employment.

Introduction to Hospitality/ Recreation Careers McKnight Publishing Company

This 30-day course will open the minds and eyes of your students to these careers. Such enterprises as hotel/motel, restaurant, community recreation, travel convenience are examined.

Introduction to Communications Careers McKnight Publishing Company

This course will emphasize the importance of communications to your students. Radio is covered in detail and television and motion pictures are discussed. Personal communications are not overlooked, and the important art of listening is brought forth through a stimulating one-on-one exercise.

Introduction to Manufacturing Careers McKnight Publishing Company

Life-like "hands-on" activities introduce your students to such manufacturing industries as metal working, plastics technology, woodworking, printing, etc. All materials you will need to teach the class will be available, including text/activity manual, filmstrips and cassettes, transparencies, testing materials, and such instructional equipment as a vacuum former, a metals press, a graphics manufacturing kit and various supplies to do the activities.

Introduction to Construction Careers McKnight Publishing Company

Students will study surveying, foundations, superstructures, utilities, interiors and exteriors, and finishing - all in 30 days! Activities give them true-to-life experiences, such as learning about and selecting building supply materials, which are intended to lead them to a tentative decision-making experience regarding the careers available in the construction industries.

Activities for Succeeding in the World of Work McKnight Publishing Company

(Student workbook) Designed to allow the student to gradually develop a positive self-image between himself and the world of work. This workbook helps the student relate to adult responsibilities by providing experiences in making a career choice in a logical order. Activities are structured so the student builds on little or no knowledge to form concrete plans for his future.

The World of Manufacturing McKnight Publishing Company

The World of Construction McKnight Publishing Company

Occupational Kits and Laboratories:

Widening Occupational Roles Kit Science Research Associates

The Widening Occupational Roles Kit (work) has been designed to help schools provide students a cohesive program to foster vocational maturity. This kit strives to assist students to understand more about themselves and more about the world of work and people involved in work situations. Other aspects such as job duties educational training are included for the student's benefit.

Job Experience Kits Science Research Associates

The Job Experience Kit provides simulated work experiences in twenty different occupations. It is designed to stimulate student interest in career exploration. Each kit gives the student a chance to try out realistic work problems in a specific occupation. The kit puts him inside the job. He is no longer limited to standing outside the job. He is not limited to standing outside the work experience, trying to understand it through description alone.

Occupational Information Tapes:

"American Occupations" International Teaching Tapes, Inc.

This series of tapes describes the necessary training, obstacles, and rewards of almost any vocation available. Students can explore many work opportunities in his quest for the career that satisfies his aspiration, expectations, and that he feels is within his ability to achieve.

Occupational Interview Tapes International Teaching Tapes, Inc.

Choosing a Profession Series International Teaching Tapes, Inc.

These tapes stimulate thinking about opportunities for life's work and encourage students to fully examine all professions before making their own choice. They urge the student to work closely with his guidance counselor in gaining a better understanding of himself and his abilities.